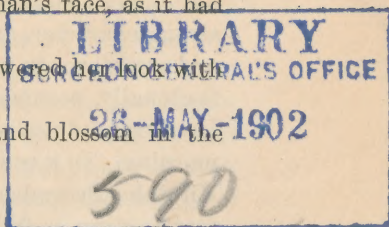


Yet a vague disappointment showed in the woman's face, as it had in the girl's.

But this time the man's voice trembled as he answered her look with the words,—

“Only the actions of the just smell sweet and blossom in the dust.”



WASHINGTON'S DEATH AND THE DOCTORS

DECEMBER, 1799

BY SOLOMON SOLIS COHEN, M.D.

WHEN the author of "The True George Washington" says, "There can be scarcely a doubt that the treatment of Washington's last illness by the doctors was little short of murder," he gives blunt utterance to an opinion quite widely held. Physicians have not spoken so bluntly, but there have not been wanting medical writers to question the wisdom of the "copious bleedings," the blistering, and the purging that Dr. Craik and one of his colleagues deemed necessary. That patients are not so treated to-day is true; but it would be strange had medicine alone failed to advance in a hundred years, and the physicians of 1799 cannot justly be condemned for failure to have anticipated the discoveries of the nineteenth century.

Let us briefly recall the facts: On Thursday, December 12, 1799, Washington "rode abroad on his plantations" from ten o'clock in the morning until three o'clock in the afternoon. During the most of this time "rain, hail, and snow fell alternately, with a cold wind." The next day he complained of soreness of the throat and "had a hoarseness, which increased towards evening." He thought so little of this, however, that but for a snowstorm he would again have ridden out on Friday morning, and in the afternoon he did go out in the snow to mark some trees to be felled—a work not urgent. He passed his evening as usual, rejecting Colonel Lear's suggestion that he needed medicine with the remark that he "never took anything to carry off a cold, but let it go as it came." At two o'clock the following morning, Saturday, December 14, he was seized with a violent chill. Breathing became difficult, and speech was painful. So soon as the house was stirring—about five o'clock—he sent for an overseer and ordered the man to bleed him. At this time he "could swallow nothing," and was "convulsed and almost suffocated." Only about twelve ounces of blood were taken, although the General urged that the opening be made larger and the flow encouraged. Not until some time later, when it became evident that he was rapidly growing worse, could he be prevailed upon to send for his old friend and physician,

Dr. James Craik, who seems to have been a man of scientific education, strong character, and good judgment. Washington placed entire trust and confidence in him; and the two had been intimately associated professionally, personally, and officially since the days of Braddock's field. Dr. Craik did not reach Mount Vernon until eleven o'clock on Saturday morning. In a communication published in *The Times*, of Alexandria, Virginia, December, 1799, by Drs. Craik and Dick, the subsequent history is given as follows:

"Discovering the case to be highly alarming, and foreseeing the fatal tendency of the disease, two consulting physicians were immediately sent for, who arrived, one at half past three, the other at four o'clock in the afternoon. In the interim were employed two copious bleedings, a blister was applied to the part affected, two moderate doses of calomel were given, and an injection was administered, which operated on the lower intestines, but all without any perceptible advantage, the respiration becoming still more difficult and distressing. Upon the arrival of the first of the consulting physicians it was agreed, as there were yet no signs of accumulation in the bronchial vessels of the lungs, to try the result of another bleeding, when about thirty-two ounces of blood were drawn without the smallest apparent alleviation of the distress. Vapors of vinegar and water were frequently inhaled, ten grains of calomel were given, succeeded by repeated doses of emetic tartar, amounting, in all, to five or six grains, with no other effect than a copious discharge from the bowels. The powers of life seemed now manifestly yielding to the force of the disorder. Blisters were applied to the extremities, together with a cataplasm of bran and vinegar to the throat. Speaking, which was painful from the beginning, now became more impracticable, respiration grew more and more contracted and imperfect, till half after eleven o'clock on Saturday night, when, retaining the full possession of his intellect, he expired without a struggle."

The diagnosis made by Dr. Craik and concurred in by Drs. Dick and Brown was "cynanche trachealis," which they render in English as "inflammation of the upper part of the wind-pipe."

As the symptoms point to the somewhat rare affection now known as "acute cedematous laryngitis," it is usually assumed that they were mistaken; but the nomenclature of pathology has changed so much that it is by no means certain that part of the supposed error in diagnosis is not merely a difference in terminology.

Although Morgagni, in 1765, and subsequently Boerhaave and Van Swieten, had given from post-mortem studies an account of laryngeal cedema, even so great a pathologist as Bichat described it imperfectly in 1801, and it was not until 1808 that Bayle communicated to a learned society of Paris the clinical and pathologic studies through

which the disease of which Washington probably perished became clearly differentiated. Granting, therefore, that a mistake in diagnosis was made, it was one that the imperfect knowledge of the day could not avoid. It is evident, moreover, that certain essential facts were clearly recognized by those country doctors of a century ago: namely, that there was present in the upper portion of the breathing-tube of their illustrious patient an inflammatory swelling obstructing the passage of air, making the act of swallowing difficult and painful, and interfering with speech, and that unless they could restore the normal flow of blood through the parts and thus reduce the swelling, suffocation must take place. To this end, therefore, they directed their treatment.

To understand both the wisdom and the ineffectiveness of that treatment it is necessary to understand the conditions present; and to make these clear it will be necessary to picture, though briefly, and in mere outline, the construction of the breathing apparatus of man.

The human lung is made up of innumerable microscopic sacs with subdivisions known as air-cells, which are the expanded and specialized terminations of certain small tubes springing from each "bronchiole" or terminal twig of the respiratory tree, the whole being roughly comparable to a bunch of grapes. Pairs of bronchioles unite to form larger, and these to form still larger "bronchial tubes," which finally converge in the main "bronchus." The two main bronchi, one from each lung, then join with each other and form the trachea (or wind-pipe) like the branches of an inverted Λ . The bronchial tubes are made up in part of cartilage (or gristle) to give them stability, and in part of membrane and fibrous tissue to give them suppleness and elasticity. As the larger bronchi, and finally the trachea, are reached, the cartilaginous portions become larger and more frequent, and are disposed in a special manner. At the upper part of the air-tube the cartilages become still more highly specialized, and the structure known as the larynx or voice-box appears. This is functionally, structurally, and developmentally a continuation of the wind-pipe, modified for the production of voice. A cartilage (*cricoid*) thicker and stronger than the tracheal rings forms the base; then, passing upward, there appears as in the trachea a membranous interval, and then a large expanded shield-shaped cartilage (*thyroid*) the prominent upper and anterior portion of which forms the "Adam's apple." Above the thyroid cartilage is again a membrane, and then the ring of cartilage is replaced by a bone (*hyoid*) to which by muscles and ligaments is attached the tongue, and the breath-tube ends. But the open mouth of the breath-tube, just behind the tongue, must be protected from the entrance of food, and a little cartilage (*epiglottis*)—the lid of the voice-box—is found here, arranged by shape and muscular and membranous attachments to act as a valve, open during breathing and closed during swallowing. The

air-cells, the bronchioles, bronchi, trachea, and larynx are lined with mucous membrane, in which and beneath which, in the connective tissue between the mucous membrane and the cartilage or outer layer of fibrous tissue (submucous tissue), are found nerves, blood-vessels, lymph-vessels, etc. In the connective tissue are certain spaces that normally contain the fluid lymph, and which may become overfilled with a fluid of morbid origin in certain forms of inflammation. Within the larynx, attached to certain cartilages, are found two bands of muscular and fibrous tissue known as the vocal cords, or vocal bands, which during voice production are brought close together, leaving a mere chink for the passage of air, and during breathing are separated more or less widely.

The wind-pipe is oval in section, its greatest diameter averaging one inch, while the "chink of the glottis" or space between the vocal bands is a triangular opening, averaging one inch in length, and when at its greatest, about one-half inch in width at the posterior portion or base of the triangle. Small at best, yet sufficient for its purpose, it is the gate-way of the breath, the very portal of life. Its obstruction means danger; its occlusion, death. Here, probably, in the case of General Washington, the fatal swelling took place; and concerning this a word may be necessary.

In the process known as inflammation, the flow of blood through the affected part is obstructed, and sometimes completely cut off. The blood-vessels are engorged, and through this and cell-multiplication the part becomes much enlarged. Sometimes when the inflammation affects structures having much connective tissue with large lymph-spaces, and under certain exciting conditions, fluid will leak, as it were, out of the vessels, and the inflamed part will become greatly distended. This severe process is termed acute inflammatory œdema. Inflammation of the mucous membrane of any part of the respiratory tract necessarily interferes with breathing. In the larynx, a simple superficial or catarrhal inflammation without much swelling need not cause great discomfort or danger, but if the inflammation extend to the sub-mucous tissues and be so severe as to cause œdema, or if œdema arise from some non-inflammatory cause, as at times happens, the air may be entirely shut off from the wind-pipe, the bronchi, and the lungs. Catarrhal laryngitis is a common affection, the usual "hoarse cold," or throat cold, and yields readily to treatment. In some cases, whether from severity of the exposure, from complicating infection, disease or injury, from previous weakness of the part, or other cause, it may suddenly take on the œdematous character, and the change usually occurs, as in the historic example we are considering, in the small hours of the morning, when the vital tide is at ebb.

Sometimes œdematous laryngitis follows a "sore throat," or, in

technical language, "pharyngitis;" in still rarer cases it occurs primarily as laryngeal oedema, though concerning this qualified observers even to-day are not agreed. When the vocal bands are involved, the distress is intense and suffocation is imminent, for the chink between them, the door-way of the breath, may be reduced to a mere irregular slit. Even when the oedematous swelling is not sufficient to shut off the air-way, there may be from irritation, and even from the patient's pain and fear, spasmodic closure of the vocal bands, and thus the victim become suffocated by an internal self-strangling. When the epiglottis is affected its mucous membrane becomes greatly swollen and every movement is painful; thus swallowing produces great agony and is finally refused. The distress in breathing, and at last the inability to draw breath, the painfulness, and at last the impossibility of swallowing and of speech, described by Colonel Lear and General Washington's physicians, are thus explainable upon the supposition that he suffered with acute inflammatory oedema of the larynx, determined by exposure and neglect.

Are the physicians blamable for not recognizing the conditions?

In 1799 it was not known that the larynx could be examined by means of its reflection in a mirror introduced into the throat above and behind the tongue. Not until 1855 had Signor Manuel Garcia, of London, devised a practical laryngoscope for the purpose of studying the movements of his own vocal bands in singing; and not until two or three years later did Dr. Czermak, of Buda-Pesth, perfect the instrument for medical purposes. It was only in 1896 that Dr. Kirstein, of Vienna, perfected an instrument by which in certain cases the tongue can be so drawn forward as to expose the interior of the larynx to direct inspection. It is true that in some cases of oedema of the epiglottis that structure projects up behind the tongue so that it can readily be seen, and that in the absence of a laryngoscope or of Kirstein's "auto-scope" one may sometimes detect with the finger the swelling of the epiglottis and of the folds of mucous membrane that bound the entrance to the larynx. But again be it said, such cases are not of everyday occurrence, and the knowledge that these conditions were to be sought for could become possible only through repeated post-mortem investigations. Post-mortem examinations were not often permitted in America a century ago. Even in France, then the home of pathology, ten years were to elapse before Bayle's publication of his researches made the facts accessible to students.

In the existing state of medical science in 1799 the diagnosis of "obstruction by inflammatory swelling in the upper part of the breath-tube" was the only one possible; and that this is what Drs. Craik and Dick designated by the term "cynanche trachealis" is shown by the manner in which they Englished it.

To-day the condition would not be treated by general bleeding. Leeches might be applied, or if the cedema occupied the epiglottis and that portion of the larynx above the vocal bands, the tumefied structures would be nicked with a knife (scarified), in such a way, however, that the blood should not run into the wind-pipe, and this would probably afford sufficient relief to the obstruction in both circulation and respiration to bring about recovery. Drugs to relax circulation and overcome spasm, oxygen and a supporting medicament might be given by inhalation or under the skin. Ice might be applied over the larynx. Some physicians would inject under the skin a drug to provoke quick sweating, and a hydrogogue cathartic would be given to drain off some of the water of the blood, in order that through thirst on the part of the vessels generally the effused liquid might be reabsorbed. Were the vocal bands or the larynx below them so involved that scarification would be impracticable or dangerous, it might be necessary to open the wind-pipe below the swelling (tracheotomy).

It is doubtful whether tracheotomy would have been consented to by General Washington and his family; and had it been performed without saving him, Mr. Ford's "scarcely" and "little short" might have been omitted from the indictment. But this operation, though sometimes simple, is often extremely difficult, calling for the highest degree of surgical skill and quickness to meet emergencies, even in these days of marvellous surgery. A hundred years ago it was rarely done even by the most celebrated surgeons, and the three doctors of rural Virginia might well be pardoned for not attempting it.

But is there no other means than tracheotomy to restore the occluded caliber of the breathing-tube? So late as fifteen years ago the answer would have been "No." To-day, thanks to the genius, the patience, the industry, and the devotion of Dr. Joseph O'Dwyer, of New York, we have a tube that can be placed, and will remain, between the vocal bands, and instruments that enable one to insert or remove it through the mouth. Intubation has almost entirely displaced tracheotomy in the treatment of membranous croup and laryngeal diphtheria. It is applicable in some cases of laryngeal cedema. It has saved the lives of thousands.

Would it have saved the life of Washington? Lacking, as we do, exact information concerning the seat of obstruction, the extent and degree of the cedema, and the existence of infection or complications, the question cannot be answered.

Was the treatment described by Drs. Craik and Dick justified?

The conception of inflammation entertained by the physicians of 1799 is not the same as that taught in 1899. The cellular structure and the cellular pathology were unknown, the rôle of the blood-vessels

was rather guessed at than realized. Infection and its processes were but vaguely and imperfectly understood. The very name of microbe was far in the future.

In the absence of the knowledge that has since been given to the world, what was Washington's trusted friend and attendant, Dr. James Craik, to do? One thing first of all—to bleed his patient freely in the hope that by mechanical and nervous influence the general emptying of the vessels might bring about the renewal of the obstructed circulation in the larynx. Secondly, to try to drain the water of the blood by means of intestinal discharges and free sweating; hence the calomel and the antimony, which indeed served their immediate purpose. Thirdly, to remove serum from the blood in the neighborhood of the inflamed part; hence the blister. Fourthly, to try to allay the pain and oppose the local effects of cold by heat and sedative applications; hence the inhalations of steam and vinegar. Modern research has given us better diaphoretics than antimony, and better medicaments for inhalation than vinegar, but the principles dictating their employment were good.

Edematous laryngitis, even when promptly recognized and skillfully treated, is very fatal; of Bayle's seventeen cases sixteen perished. Sestier, studying in 1852 the recorded cases of laryngeal oedema of various kinds, found that death had resulted in one hundred and fifty-eight out of two hundred and thirteen cases in spite of tracheotomy having been performed thirty times. Of forty-one cases communicated in 1898 to the American Laryngological Association as having been all that had been recorded in the world's literature of ten years, but twenty-nine recovered, tracheotomy having been performed seven times with six recoveries. The effusion is rarely simply serous, but in a number of cases is in part purulent. Whether or not, as claimed by some modern authors, the disease is always septic, and closely akin if not identical with erysipelas, it is true that in many cases blood-poisoning is added to the local dangers. That such was the case with General Washington his severe chill might indicate. Moreover, the prolonged impairment of breathing in itself causes the retention in the blood of impurities, carbonic acid especially, that should be removed through the lungs, and this increases the liability to death.

Had Washington sent for Dr. Craik earlier, it is quite possible that some simple treatment might have averted the severity of the attack; or even had he adopted the good old-fashioned plan of taking a hot mustard foot-bath, and drinking a hot whiskey-toddy, and with blankets and hot bottles bringing on "a good sweat," the occurrence of oedema might possibly have been prevented; but once the chill and the oedema had occurred, the chances of recovery were slight. Had he then been freely bled, or even had the bleeder he later sent for been

less timid, the morbid process might perhaps have been held in check; at all events, there was ample justification for the attempt so to "jugulate the inflammation." Or, if the disease depended upon toxæmia (blood-poisoning) of any origin, it needed but to follow the venesection with the infusion into the veins or beneath the skin of "physiologic salt solution," to conform with the best modern, scientific practice. The subsequent bleeding offered less hope of success, but it did not greatly weaken one of Washington's large frame and remarkable physique even at sixty-eight years of age; and it gave him the one chance of recovery that the knowledge of the day afforded.

ALPHONSE DAUDET AND HIS INTIMATES

BY JEAN FRANÇOIS RAFFAËLLI

Translated by Maria Lansdale

WE love to talk of the friends we have lost, familiar friends whom we have chosen in the course of a lifetime, who have become a part of our very selves. The hours passed and shared with them represent the best of our lives.

For me Daudet possessed every attraction. My senior by ten years, he embodied a ripe experience; he was handsome, with the peculiar charm of our men of the South, and lastly he was a brilliant and untiring talker, conjuring up wonderful pictures, his imagination playing about some trifling incident until he had transferred it into the realms of the marvellous. The circumstance of a young girl stooping on her way to the fountain to tie her shoe became in his hands a captivating fairy tale.

I never wearied of hearing him "tell stories." But first of all I want to describe the odd fashion in which we first met, a curious prelude to a long friendship.

Towards 1878—think of it, over twenty years ago!—Daudet and I were both in the habit of frequenting the house of Nittis, the Italian painter, who had at that time one of those Parisian salons open to any one who had made a name in art or letters or in the world of connoisseurs. I was barely thirty, and the art of painting, at all times my passion, was then something absolutely sacred. To attack it was like attacking the Ark of the Covenant, and merited instant death. It was nothing short of sacrilege. Daudet, exceedingly near-sighted, and barely able to distinguish pictures, had nevertheless undauntedly formed his opinions about them, and almost denied their very existence. For him painting was nothing but smoke and fog.

Certain speeches of his on the subject of this beloved art having